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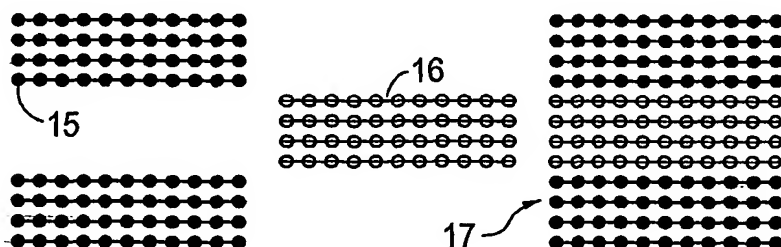
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(54) Title: **SYSTEM AND METHOD FOR MAGNETIC RESONANCE IMAGING**



preferred embodiment of the invention non-proton magnetic resonance signals are used for the central portion of the k-space and proton magnetic resonance signals are used for the periphery of k-space. Accordingly, the reconstructed magnetic resonance image shows contrast relating to the non-proton nuclei and fine resolution dominated by the protons. Hence, the invention can especially provide a solution for the limited time available for the acquisition of non-proton magnetic resonance signals.

(57) Abstract: The invention relates to a system and method for magnetic resonance imaging. In order to achieve high resolution imaging a magnetic resonance imaging system and method is proposed, wherein magnetic resonance signals using a first resonance frequency are used for a central portion of k-space and magnetic resonance signals using a second resonance frequency are used for a peripheral portion of k-space. In a

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